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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/656,336

09/08/2003

Toshiaki Tsuda

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EXAMINER

GUHARAY, KARABI

ART UNIT

PAPER NUMBER

2879

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/656,336

Applicant(s)

TSUDA ET AL.

Examiner

Karabi Guharay

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on RCe, filed on 5/31/07.
- 2a) ☐ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 5/31/07 has been entered.

Response to Amendment

Amendment, filed on 5/02/07 has been considered and entered.

The following rejection is based on a foreign reference to Niimi et al. (JP 2001-076677A). A copy of machine translation of the applied reference is hereby provided, however, an official English translation of the reference has been requested and would be submitted as soon as it is available to examiner.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-7 are rejected under 35 U.S.C. 102(b) as being anticipated by Niimi et al. (JP 2001-076677).

Regarding claims 1, 4-5, Niimi et al. disclose an arc tube (1 Fig 1) for a discharge bulb in which both ends of the light emitting tube inserting electrodes (4)

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respectively are sealed and a close space having the electrodes opposed to each other and filled with a light emitting substance with a rare gas is provided in the light emitting tube (paragraph 11), wherein the light emitting tube comprises translucent ceramic formed substantially cylindrically and has a ratio of outside diameter d ($D1$) to a whole length L ($L1$) ranging from 0.2-0.5, (see English Abstract and paragraph 13), wherein both end of the light emitting tube are sealed by a molybdenum layer (10 of Fig 3, made of molybdenum, paragraph 14) which bonds the light emitting tube (2) to Mo-pipes (pipe 7 made of molybdenum, see Fig 3) in which the electrodes (8 & 5) are fixed and held respectively, wherein each of the electrodes is formed by integrating a tungsten line (5) and a molybdenum line (8) with an end of the tungsten line opposed to an end of the molybdenum line, wherein the molybdenum line (8) is welded to one of the molybdenum pipe (7, see Abstract).

Regarding claim 2, Niimi et al. disclose that the light emitting tube has a thickness of 0.25 mm to 1.2 mm (paragraph 14).

Regarding claims 3 & 6, Niimi et al. disclose all the limitations of claims 3 & 6 (see rejection of claim 1) however, do not specifically mention that the light emitting tube has a parallel ray transmittance of 20% or less and a whole ray transmittance of 85% or more, since Niimi et al. disclose that light source is a pseudo-point light source having same d/L ratio as the claimed bulb, thus, it is inherent that Niimi's light source has parallel ray transmittance of 20% or less and a whole ray transmittance of 85% or more.

Regarding claim 7, Niimi et al. disclose that the outside diameter d ranges from 2.0-4.0mm and wherein the whole length L ranges from 6.0-14.0mm (see Abstract).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 3 & 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jackson (US 6861805), in view of Niimi (US 6703136) and further in view of Uchiyama et al (EP 0859246).

Regarding claims 3 & 6, Jackson et al. disclose an arc tube (20 of Fig 9) for a discharge bulb in which both ends of the light emitting tube inserting electrodes respectively are sealed and a close space having the electrodes opposed to each other and filled with a light emitting substance with a rare gas is provided in the light emitting tube (lines 36-50 of column 4), wherein both end of the light emitting tube are sealed by Mo-pipes (34, 44 made of molybdenum) in which the electrodes (30,35: 40, 45) are fixed and held respectively, wherein each of the electrodes is formed by integrating a

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tungsten line (30, 40) and a molybdenum line (35, 45) with an end of the tungsten line opposed to an end of the molybdenum line, wherein the molybdenum line (35, 45) is welded to one of the molybdenum pipe (34, 44, see Fig 9, lines 51-56 of column 4).

Jackson et al. further disclose that the both ends of the light emitting tube are sealed by sealing frit (33) but fail to teach a molybdenum layer for sealing.

However, in the same field of sealing metal rod or pipe to the ceramic vessel of a discharge tube, Niimi teaches a sealing or joining structure (main phase 14 of Fig 1b, lines 65 of column 1-line 9 of column 2) between molybdenum pipe or rod with the ceramic vessel which comprises a molybdenum layer (lines 28-29 of column 4) in order to have high strength and improved air tightness and resistance to corrosion to the joining structure (lines 37-45 of column 2).

Thus, it would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate molybdenum layer to seal the molybdenum pipe to the ceramic vessel of Jackson since this will provide a high strength joining or sealing structure having improved air- tightness and resistance to corrosion.

Further Jackson fails to disclose that the light emitting tube has a parallel ray transmittance of 20% or less and a whole ray transmittance of 85% or more.

Uchiyama et al (EP 0859246) teach a light-emitting tube (paragraph 48) that has a parallel ray transmittance of 20% or less (see figure 6) and a whole ray transmittance of 85% or more (paragraphs 46) in order to improve the viewing angle of the device (paragraph 1). Hence, it would have been obvious at the time of the invention to one of

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ordinary skill in the art to modify the arc tube of Jackson et al. with the transmittance of Uchiyama et al. since this will improve the viewing angle of the device.

Response to Arguments

Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

Contact Information

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karabi Guharay whose telephone number is 571-272-2452. The examiner can normally be reached on Monday-Friday 9:00 am - 5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimeshkumar D. Patel can be reached on 571-272-2457. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

K Guharay
Karabi Guharay
Primary Examiner
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8/7/07